

ABSTRACT OF THE DISCLOSURE

A data bus is precharged to a precharge voltage before data read operation. In the data read operation, the data bus thus precharged is electrically coupled to the same voltage as the precharge voltage through a selected memory cell. A driving transistor couples the data bus to a power supply voltage (driving voltage) in order to supply a sense current in the data read operation. A charge transfer amplifier portion produces an output voltage according to an integral value of the sense current (data read current) flowing through the data bus, while maintaining the data bus at the precharge voltage. A transfer gate, differential amplifier and latch circuit produce read data based on the output voltage sensed at prescribed timing.